

AIR WAR COLLEGE

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# **BULGARIAN COMPATIBILITY WITH NATO AIR POWER**

by

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## **Biography**

Lt. Colonel Nikolay Rusev is assigned to the Air War College, Air University, Maxwell AFB, AL. In 1995, after completing the full course, he graduated from the Bulgarian Air Force Academy “Georgi Benkovski”, Dolna Mitropolia. Military speciality: Aviator-Pilot for the Air Force; Civil speciality: Engineer-Pedagogue in Electronics and Automation with Master degree in Aviation Engineering. During 2003-2005 Lt. Colonel Rusev was a student in Bulgarian ACSC and graduated as a Master in “Command and Control of Air Force operational and Tactical Units”. He served at various positions and the last one was Deputy Commander on Flight Training - 3<sup>rd</sup> Air Force Base, Graf Ignatievo, Bulgarian Air Force. Lt. Colonel Rusev has flight experience on Zlin-42M, Tecnam P2006T, L-29, and is a MiG-23 and MiG-29 instructor pilot.



## **Abstract**

The Bulgarian Air Force is the main type of armed forces for participation in joint and independent operations, both nationally and multinationally. They ensure air sovereignty of the Republic of Bulgaria by monitoring, securing and defending its airspace; they perform tasks on protection of critical infrastructure and strategic sites throughout the country. But the change of political system in the Republic of Bulgaria placed the Air Force in a position to undergo a serious test. The problems of transition deprived the Bulgarian Armed Forces, and in particular the Air Force from the opportunity to adequately modernize and preserve indispensable capabilities for national security. This paper argues that incompatibility between the Bulgarian Air Force and the forces of NATO partners exists, and it is a problem which has to be urgently solved.

The overall intent of the paper is to expose problems facing the Bulgarian Air Force caused by the endless reductions and transformations of Armed Forces and propose possible solutions. The paper consequently reveals different stages of development of the Bulgarian Air Force. It starts from its very first days, through World War I and II, continues with the Cold War and presents the current situation. It reveals not only the specific problems with the MiG-29s that need overhaul, but also dangerously insufficient flight hours; inadequate number of qualified pilots; aging of the flight crews; excessive load on the pilots and increased risk of mass retirement of seasoned pilots. The paper also examines the logistic support problems like the lack of funding; exhausted opportunities for aircraft maintenance with our own forces; insufficient number of operational fighters and the time necessary for spare parts delivery and repairs. It also offers options which can fill the enormous gap between Bulgarian and NATO Air Forces. Several inferences and recommendations emerge from this paper, which are intended to help Bulgarian decision makers make an informed and appropriate decision regarding the development of fighter aviation of the Bulgarian Air Force.

The proposed solution offers clear benefits for the state, society and the armed forces. It would ensure security, enhance the prestige and greatly evolve the economy of Republic of Bulgaria.



## **Introduction**

The European and world security environment is extremely volatile and is not expected to return to normal in the near future. In fact future threats are expected to become more sophisticated and complex, and to occur worldwide. The responsibility to be ready to react adequately to any crisis situation lies with States and NATO. In difficult times we see that NATO means trust. But that trust is built on compatibility not only in control stations and training commanding officers, but also in the air. It is necessary to continue developing tactics, techniques and procedures that make the Bulgarian Air Force more compatible with the Alliance, as well as capitalizing on the inherent advantage of speed and flexibility. The Bulgarian Air Force is part of NATO and operates as a united system to develop collective defense, and to increase interoperability and capabilities, while at the same time strengthening the confidence of our allies. It will build trust and relationships which will be the bedrock for our future cooperation. Working with NATO partners provides us with access to certain capabilities that we ourselves could not achieve. Stable relationships increase the chances of achieving a strategic effect on events. They are an example of how we can together increase our interoperability and readiness.

Air sovereignty of the Republic of Bulgaria is guaranteed by the air defense system, which since the country's accession to NATO is an integral part of the Integrated Air and Missile Defense system of the Alliance. A major element of this system is the Air Force which carries Quick Reaction Alert (QRA) duty 24/7. Unfortunately, the ability of the Bulgarian Air Force to respond to existing threats is inadequate. In order to have advanced skills the Air Force needs adequate equipment and enough resources. Unfortunately the Bulgarian Air Forces are facing one of the hardest times during its existence. Civil-military balance is off-kilter, and only 1.1% of GDP is allocated to the Armed forces, of which 20.4% is designated for the Air Force. The end of the Cold War together with the change of political

systems imposed a devastating impact on the capability of the Air Force to provide legitimate coalition air power. All these factors entail serious problems which are begging for a solution. Bulgarian politicians are facing the dilemma to continue 104 years of Bulgarian fighter aviation tradition, or to disband it and request somebody else to guard the Bulgarian sky. But we should never forget that a nation that does not know and does not respect its past has no future.

## **Thesis**

Bulgarian Air Forces are not compatible with NATO Air Power. The most rational and cost-effective solution to that problem is the acquisition of a new, Western-type fighter which guarantees an increase of combat capability and ensures compatibility with NATO Air Power.

## **Historical facts and cultural prerequisites**

### **Bulgarian AF during the Balkans war and WWI.**

In 1911-12, world combat aviation was still in the early stages of its development. For this reason German Field Marshal Hindenburg believed that the future belonged to the airship, while French Marshal Foch thought that the aircraft could be used for sporting purposes only.<sup>1</sup> Bulgarian generals, however, thought about airpower in another way. They for the first time in the world formed airplane flights in each field army. They used the aircraft for combat air reconnaissance, photographing and adjusting artillery fire; it was Bulgaria's largest contribution to airpower development. Italian magazine "L'Aero" and the Croatian newspaper "Novosti" wrote about the heroism of the Bulgarian pilots stating: "The first and greatest glory in aviation belongs to Bulgarian aviation since it is the first in the world in the Balkan War, during the siege of Adrianople, to use airplane bombs and hinted at the increased

role of aviation in future war."<sup>2</sup> For example, on 14 November 1912, the first formation air to ground attack took place when a four-ship formation simultaneously bombed the Edrine fortress. On 22 January 1913, the pilot Lieutenant Milcho Mitev with Italian volunteer Sabena serving as an observer flying over the sea of Marmara, detected and bombarded the Turkish ironclad "Hajredin Barbarossa." This was the first attack from the air against a warship in airpower history. At the same time, the pilot Simeon Petrof performed the first night flight in the history of aviation, and the photographer Stoyan Terziiski for the first time in the world carried out reconnaissance and aerial photographs of the Turkish fortifications at Edirne, which was used by the headquarters of the 2nd Bulgarian Army to plan the upcoming campaign. During World War I the Air Division of the Bulgarian Army, equipped with brand new German LVG aircraft, supported the advancing Bulgarian infantry. With the expansion of the frontline, the Entente's opposition aircraft began reconnaissance and bombing Bulgarian infantry units of the Macedonian front, but Bulgarian pilots successfully opposed the attacks and destroyed several enemy planes.<sup>3</sup>

### **Bulgarian AF during the WWII and Cold war**

After the accession of Bulgaria to Nazi Germany on 1 March 1941, the Bulgarian government provided its airspace for the upcoming invasion of Yugoslavia and Greece. In December 1941, Bulgaria declared "symbolic war" against the US and England. Soon after, at the meeting of the Committee of Imperial Defense on 19 October 1943, under the chairmanship of British Prime Minister Winston Churchill, a decision was made for a series of air raids over Sofia. The goal was to give Bulgaria a "hard lesson" and force it to surrender as an ally of the Reich. In the air war with England and the United States Bulgarian pilots fearlessly entered the uneven duel against enormous air armadas of "flying fortresses" and alliance fighters. Many big Bulgarian cities were subjected to severe bombardments. In the



course of the hostilities, 53 alliance aircraft were destroyed: 37 of them heavy bombers and 16 fighters.<sup>4</sup>

Immediately after World War II, the Bulgarian Air Force introduced various types of propeller driven Soviet aircraft like the Yak- 9 , IL -10, Tu -2, etc. After the end of the Korean War, the so called "jet age" occurred. The Bulgarian Air Force adopted fighters like the Yak-23, MiG - 15, MiG - 17, MiG - 19, Il - 28 bomber and Mi - 1 helicopter. Soon after MiG - 21 and MiG - 23 were adopted. In the 1970s and 1980s, Mi - 17 and Mi - 24 attack helicopters, Su - 25k ground-attack and Su - 22M4 entered service. The last aircraft acquired by the Bulgarian Air Force was the MiG - 29 in 1988 and Cougar/Panther helicopters. At that time, the Bulgarian Air Forces were the most powerful and well trained in the Balkans.<sup>5</sup>

Such are the facts of the history of Bulgarian Air Forces. They are proof of the heroism of the Bulgarian pilots, who defended their native skies from intruders for 103 years! Moreover, there were uneasy years during which the Bulgarian Air Forces were created, developed and reached their apogee; years of constant struggle for self-assertion and improvement.

## **Current Security Situation**

### **The QRA duty and MiG-29 fleet:**

The MiG - 29 is the fighter which assumes the main responsibility for QRA duty in the Republic of Bulgaria. QRA duty is responsible for securing and defending Bulgarian and integrated NATO airspace and assisting aircraft in distress. It is carried out 24/7 by two-ship formation fighters from the Bulgarian Air Force. In order to carry out a QRA duty a pilot must master all the levels of proficiency. It means to be able to fulfill all types of missions, day and night in all meteorological conditions. The time required to absorb all the skills to carry out the QRA duty is between two and three years. Pilots, who have not completed the

entire training, may be allowed to carry out only day duties or duties in visual meteorological conditions. Pilots on duty are on higher level of readiness status. They must be airborne within 15 minutes after the scramble signal. Depending on the air threat the pilots fulfill different type of missions (visual identification, shadow, interrogation, intervention to point, force to land, weapon engagement). According to AIRCOM SUPPLAN 24600D, dated 01 JAN 15, "NATO Air Policing is a peacetime mission using the NATINAMDS [NATO Integrated Air and Missile Defense System], including QRA as AD [Air Defense] Fighters to preserve the integrity of NATO Airspace and react to any intrusion. The number of aircraft, location, and posture of QRA forces in peacetime must be sufficient to preserve Alliance integrity, provide deterrence, respond to RENEGADE situations and assist aircraft in distress. The QRA Force must be capable of conducting missions 24/7 in all weather. Air Policing of AOFR [Area of Functional Responsibility] airspace is a NATO responsibility."

Unfortunately, analysis of the MiG-29 tactical and technical characteristics shows significant shortfalls in its ability to perform the QRA tasks. There is a deficit of capabilities in certain critical areas listed in NATO's "Allied Command Operations Forces Standards, Volume III - Standards for Air Forces" and "Bi-SC Agreed Capability Codes and Capability Statement." According to those standards, Bulgaria must build and maintain an ADX [Air Defense advance fighter] capability. Whether it is better to invest in a MiG - 29, which will only be able to fly until 2030, or to buy a new type of combat aircraft is the question.

The MiG-29 is a great airplane, but aside from its maneuverability and reliability, it lacks other required capabilities. This is not to say that its operation until 2030 will come without any expenditures. All units, engines and other systems need periodic repair and replacement. Every 350 hours of operation the engines need overhaul, and every 1000 hours they have to be replaced with new ones. In this sense the cost of maintaining a MiG - 29 until 2030 is commensurate with the costs of a new type of fighter.<sup>6</sup> It is also very important that

the new aircraft has 40 years of work, is compatible with our allies' fleets so the Bulgarian Air Force will be adequate in the event of a common task and will benefit the country's economy. With the new aircraft, Bulgaria will be able to participate in the deployment of powerful partnership programs.

### **Flight hours and pilot training:**

During the past several years Bulgarian fighter pilots have not accumulated enough flight hours. It is not only far below the established NATO standard of 180 flight hours per year, but also contrary to all norms for flight safety. The risk of serious aviation accidents grows every year that the flight hours remain below NATO standards. The acquisition of new aircraft will solve this problem as the Air Force will not only have a larger number of operational planes, but also the ability to remain airborne for longer sorties and at half the cost per flight hour compared to the MiG - 29. There will be a certain period (two or three years) of overlapping the MiG-29 and the new fighter during which time will be needed to convert the pilots to the new fighter. At present, however, the number of trained pilots for duty in Air Policing has decreased continuously from 36 pilots qualified for duty in 2006 to less than 50% of that today. Lower operating costs for a new aircraft and increased flight time will inevitably lead to the adoption of new capabilities and increased qualification of the flight crews even in the event of maintaining the current level of financial provision. It is because the new fighter will provide the AF with 130-150 flight hours per year per aircraft for the same amount of money compared to 70-80 flight hours provided by MiG-29. Continuously dwindling resources are concentrated primarily on experienced pilots who, with a number of compromises, barely remain current. It takes far fewer resources to keep qualified pilots mission ready than to initiate training for young pilots and prepare them at least for QRA duty. The new aircraft, overlapping for several years with the MiG-29s, will allow the AF to

increase the number of pilots due to increased total number of operational aircraft.

Furthermore, the recent retirement of MiG-21 and the impending retirement of Su-25 will redirect some financial resources to the MiG-29 and the new fighter.

In addition the aging of the flight crews emerged as a serious problem. Lack of resources to train young pilots increases the average age of qualified staff carrying duty. Bulgarian military pilots acquire pension rights after 15 years of active duty. Unfortunately most of the pilots are above the pension age, (utterly unacceptable to the nature of work and loads of the fighter aircraft), and only a small number of them are not entitled to pension. Aging of the flight crews is inextricably bound up with young pilots training. By solving the latter problem Bulgaria will totally rejuvenate its flight crews. In addition seasoned pilots suffer from excessive load up. Due to the reduction of trained pilots for Air Policing, they carry more QRA duties, which cannot be compensated with free time. As a result they progressively accumulate fatigue with all the consequences for flight safety. As a result of solving the already above-mentioned problems there will be reduced pilot workload and also a chance for young pilots to be involved fully in the QRA duty and to be engaged more intensively in flight training.

Increased risk of mass retirement of qualified pilots is also a problem begging for a solution. Insufficient flight hours, increased risk, demotivation and a lack of social packages for retention of experienced pilots lead to a growing trend for the pilots who have acquired pension rights to leave the AF. Short-sighted decisions in pension policy also lead to mass submission of reports for retirement. Therefore Bulgaria will remain without trained QRA duty pilots, and preparing new ones will take years and considerable resources. Rearming with a new fighter and the possibility of training young pilots will motivate the flight crews and will largely solve this problem.

### **Logistic support:**

Due to frequent flights by Russian strategic aviation over the Black Sea in 2014 – 15 in the Bulgarian Air Force area of responsibility, the residual life time of aircraft engines for QRA duty reached critical levels. The commander of the Air Force repeatedly put the funding problem before the leadership of the Defense Ministry with a request for the necessary funds for repairs and supplies to provide the minimum required number of aircraft for duty and training of flight crews. It was a necessary step in order to attract political attention and emphasize the seriousness of the problem. As a result a small amount of the requested sum was allocated to the AF which was barely enough to repair the engines and gear boxes for less than half of the required MiG-29s.<sup>7</sup> In addition Bulgarian Air Force exhausted the opportunities for aircraft maintenance with its own forces and resources within the units. Given the lack of financial support and in order to avoid suspension of the QRA, and with the cost of some compromises like shortening the time between technical inspections, the Air Force, together with the Institute of Defense initiated and extended the life time of a limited number of units, but all the possibilities of the so - called method of "technical cannibalism" (suspending the flights of an airplane and its use as a source of spare parts), have long been exhausted.

An insufficient number of operational fighters is another serious problem. If the incursion trends by Russian strategic aviation continue, the life time of QRA aircraft will be exhausted in less than two years. The remaining MiG - 29 jets will be automatically assigned to QRA duty and flight crews will remain without fighter jets for training.<sup>8</sup> In addition to that problem the Bulgarian Air Force frequently encounters unacceptable delivery times for spare parts delivery and delayed repairs. Its experience with the implementation of contracts under the RSK MiG framework agreement shows that it takes at least nine months from signing the contract to first delivery. At the same time, it is essential to seek maintenance diversification

for the MiG -29 by finding suppliers that can help reduce both prices and dependence on Russia.

All of the enumerated facts lead to the conclusion that absent a radical change, Bulgaria must ask its NATO partners for help. But asking other allied countries to take responsibility for the security of Bulgarian airspace cannot solve the emerging breakthrough in QRA duty in the near future, as it requires at least a year of work for the conclusion of international agreements under the Law of Treaties of Bulgaria. Moreover, estimates show that the yearly reimbursement costs of such a plan would be commensurate with the resources needed to maintain its own fighter aviation. Furthermore, the meaning of the NATO Readiness Action Plan is not for another nation to come and carry out QRA duty in Air Policing for the Bulgarian AF, but for Bulgaria to have the ability to carry out its own control and security of the airspace and to be supported by its allies in case of need. Finally, it is far more important for Bulgaria to develop its own capabilities as an allied country and to provide the financial resources to stabilize Bulgarian fighter aviation.

Refusal to maintain and develop our own skills to the task of Air Policing will also have highly negative consequences. Bulgarian Air Forces will not only be unable to recover anymore, but Bulgaria will also lose air sovereignty and national dignity. The state will be viewed as an unreliable partner, relying solely on its NATO allies for its security. Furthermore a high price for residence and preparation of Allied forces on Bulgarian territory will be paid and in case of a crisis, Bulgaria will not be able to rely on its own abilities to protect its air sovereignty and will have to rely entirely on foreign Air Forces.

Urgent actions to stabilize the MiG -29s are essential, but they are neither an effective nor permanent solution to the task of Air Policing. Such a solution is only possible with the acquisition of new fighter aircraft in sufficient numbers (at least 16). Unfortunately, the experience of other former Warsaw Pact members that have already acquired new jets

shows that in the best case the time from contract signing to the start of QRA duty takes between 18-24 months, and that was the case for the fastest option to reach operational readiness: leasing of fighters. This means that if a contract for a new fighter aircraft is signed at the end of 2016, the MiG - 29 will have to be maintained until at least 2019, which will require funding support of at least \$50 million.<sup>9</sup> Any delay in delivery of the new aircraft will considerably increase maintenance costs for the MiG - 29. Additionally, the MiG - 29 does not have a number of important and necessary capabilities for conducting modern air operations, and is not interoperable with the Air Forces of the Alliance.

### **Necessity of new fighter**

A new fighter acquisition project not only has military aspects but also economic and geopolitical effects. Among the many benefits, the acquisition of modern military capabilities will be relevant for decades, injecting fresh money into the economy, and building long-term strategic partnerships with leading aviation countries. Sustainability and firepower, cost-effectiveness and operational flexibility can only be delivered by a new fighter aircraft.

A new fighter does not sacrifice performance in one area to prioritise another area. It optimises performance across a wide range of capabilities: true multi-role; full interoperability; rapid deployment and highest availability. Furthermore the new fighter will solve the shortage of Bulgarian Air Force's capabilities by adding not only compatibility with NATO systems for communication, navigation and identification of friend or foe, but also protecting the radio communication with and between the aircraft. It will also have greater range (especially an issue when scrambling fighters to intercept bogeys over the Black Sea). The new fighter will also solve existing problems like the lack of Tactical Radio Line for exchanging voice and data (LINK 16); self-protection systems and electronic countermeasures; planning and mission analysis systems which will greatly enhance the



efficiency and effectiveness of training; and basic systems for flight crew preparation, such as Partial Tactical Trainer, simulators, etc., which greatly reduce the cost of training and extend the expensive life cycle of fighters. It will also fill in the technological gap, build powerful industrial cooperation and enhance the exchange of modern technologies.

Knowledge is everything in combat and knowing more than the enemy is vital to mission success. Modern fighter cockpits provide a combination of highly integrated systems where all information acquired from the aircraft, onboard sensors and data links are processed and presented in a clear and intuitive way. Carefully designed Hands On Throttle And Stick controls, intuitive displays and fully integrated Helmet Mounted Displays all contribute to create information superiority.

The results achieved in other countries after the successful realization of projects for the acquisition of new fighters offer irrefutable proof of the benefits of such projects.

Poland purchased 48 new F-16s – no small investment in the defense industry of the country,<sup>10</sup> but that investment drastically increased the capabilities of the Polish Air Force and made them fully compatible with all Western NATO allies.

In 1992, Boeing sold Finland 64 F/A-18s with a 100 percent industrial participation obligation. Final assembly of 57 of the 64 F/A-18s was performed in Finland by Patria Aviation. In August 2000, this highly successful partnership was completed five years ahead of schedule and has served as a model for offset programs.<sup>11</sup> Boeing also invested in the already established Nokia Company.

Hungary bought 14 new Gripen aircraft from Sweden in 2003. At the express request of the Hungarian government, Sweden offset the cost with an investment addressed almost entirely at the national economy and only a small part of it directly aimed at the maintenance of the aircraft with appropriate investment in Defense of Hungary. The offset took the form of the construction and production of white goods brand Electrolux of Sweden



to Hungary with the opening of over 10,000 jobs. As a result, Hungary is strongly export-oriented in this area, and a total of 5% of Hungary's GDP is generated by offset projects implemented under the contract for the acquisition of Gripen fighters.<sup>12</sup>

### **Implementation:**

At the same time the MiG-29 is the only fighter interceptor kept in service in the Bulgarian Air Force, it should remain operational at least for the next 3 to 5 years, to allow time for new fighter acquisition. Different technological solutions with different affects on combat effectiveness and reliability of operation of the airplane are possible. In order to achieve the best operational and financial conditions for the development of fighter aviation of the Bulgarian Air Force, further exploitation, upgrade of avionic and modernization of MiG-29s should be considered an inseparable part from the acquisition and subsequent exploitation of a new Western fighter. Upgrade of the avionics of the MiG-29s and potential modernization can be carried out not only by RSK MiG, but also by other companies, especially if integration with existing onboard equipment is not performed. Operating the MiG-29s until the end of their life cycle is a possible solution, but at the same time it is an extremely expensive solution and the cost-effectiveness ratio is totally unacceptable from a financial standpoint. Such a solution could doom Bulgarian fighter aviation to obscurity. That is why the new fighter will not only fill shortcomings in the capabilities, but will also significantly contribute to economic development and strengthen the position of Bulgaria in the region. It will help the government not only to avoid sharp increases in maintenance costs of the MiG-29 in the near future - costs exceeding annual capital expenditures of Defense - but also to replace all remaining MiG-29 and Su-25 and will lead to a significant reduction in maintenance costs. It will also solve the problem of releasing the frequencies of Defense for civil purposes (for digital television, train control, etc.). At present those frequencies are used by the MiG and SU navigation systems. Furthermore, the project will significantly contribute

to the economic development of the country by returning the cost of acquiring the fighters by building industrial cooperation with the seller. With proper implementation the project can bring serious investments in the Bulgarian economy in the field of high-tech products production of spare parts for aircraft, manufacture and maintenance of aircraft and ground equipment, and production of parts for aircraft and simulators. It can also secure transfer of know-how in the field of system integration; software development platform, create digital maps, database, application software, open new jobs with high labor assigned value, and also open a joint production with guaranteed external markets. In addition long-term strategic partnership is among the benefits of the new fighter project. Establishment of multi-national capabilities in ground handling, maintenance, training and other ordinary activities could dramatically reduce the cost of acquisition and operation of the new fighters. Such an approach can fit into the concept of "smart defense" under which allies combine their efforts to reduce costs and increase efficiency of their defense investment.

One of the most serious and at the same time wicked problems that will find its solution through the new fighter project is overcoming the Bulgarian Air Force dependence on Russia. But before examining its dependence on Russia it is important to consider some questions: Does the Pentagon use Russian engines for American heavy missiles? Does Turkey possess many more Russian helicopters than Bulgaria? Are almost half of Greek armored vehicles and air defense weapons produced in Russia? Does Poland possess two squadrons of MiG-29s and a squadron of SU-22M4? Does Slovakia possess one squadron of MiG-29s? All these questions have positive answers, which mean that Bulgaria is not the only NATO member dependent on Russia. But only Bulgaria and Slovakia rely exclusively on Russian fighters, thus their fighter aviation assets could be grounded at any time without any preliminary notice. This option is totally unacceptable and the only solution is replacement of old Russian fighters with new, NATO-compatible Western-type aircraft.

In order to preserve its capabilities to secure and protect its own and NATO integrated airspace Bulgaria should initiate full rearmament of its Air Force. It is a complicated and long process which will turn the state into a consumer of security for a very long time. The only way to evade that humiliating position is for Bulgaria to immediately start gradual rearmament of its fighter units. This will increase the trust of its partners, encourage them to support Bulgaria's initiative, and coax political and military leadership to bring the rearmament and entailed reforms to mutually satisfying conclusion. This move will help Bulgaria to be perceived as a committed predictable partner that has the potential to generate, not just consume security.

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The tasks assigned to the Bulgarian Air Force from both national and Alliance documents require the acquisition, development and maintenance of an adequate fighter aviation capability. Unfortunately, the Bulgarian Air Force has experienced a relative decline in the operational capabilities of its fighter aviation. This includes outdated technology, very limited interoperability, low efficiency and soaring maintenance costs. MiG-29s do not have the critical capabilities required to perform the tasks set by the Alliance. If they remain the only combat aircraft in the Bulgarian Air Force until 2030, it will require not only an upgrade of their avionics, but also a very costly modernization and enhancement of its capabilities.

### **Recommendations**

1. Bulgaria should comply with the international situation, to establish its own defense capabilities and to generate security, which is in the interest of all allies.
2. Bulgaria should not have a consumer behavior because it only undermines the prestige of the country and undercuts its credibility.

3. Bulgaria should purchase new Western aircraft.
4. Determine the parameters for the continued operation of the MiG-29 to be informed by the time, financial and operational conditions for the acquisition of a new type of aircraft.
5. Bulgaria should not rely on an upgrade of the avionics of the MiG-29 and potential modernization to enhance its combat capabilities because such a short-term fix would be devastating for the long-term health of Bulgarian fighter aviation.
6. The acquisition of a new fighter should be preceded by an open tender process which could guarantee transparency, which is also required by EU.

## **Conclusion**

Fighter aviation is a living organism with specific ways and means of development. It needs money, and especially today it needs a lot of money to be a contemporary guarantor of national security because Bulgaria as a society and country cannot rely on large human resources and vast territories. It must not rely on quantitative but qualitative parameters like intellect and creativity of its people to achieve national security. The new conditions, the status and level of development of the fighter aviation are a test for its suitability. Therefore, it is necessary to have a thorough knowledge of its challenges as part of the problems of the armed forces and the country itself.

The political leadership of Bulgaria faces a dilemma to either continue to fund the existence of Bulgarian fighter aviation or turn to NATO partners to ensure the security of the airspace of the Republic of Bulgaria. A similar dilemma has never been faced in the 104 year history of the Bulgarian Air Force. The solution of such a problem is only one - the purchase of new Western aircraft. Only then will Bulgaria continue to be responsible for its territorial independence and maintain the respect of the international community and NATO partners.

Bulgaria used to have one of the most powerful Air Forces in the Balkans. That time is long gone. Nevertheless, while it is important to understand that Bulgaria's coalition partners can always assist it in the protection of its territory and airspace, no one other than Bulgarians should be responsible for their Motherland.



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